Explanation of Significant Differences

Lorentz Barrel and Drum Superfund Site

1515 South Tenth Street
San Jose, California

I. Introduction

This document presents the explanation of significant differences ("ESD") for a proposed change to the remedy chosen in the Operable Unit 2 Record of Decision ("OU-2 ROD") for the Lorentz Barrel and Drum Superfund site (the "Site"). The OU-2 ROD was dated September 22, 1988, and addressed the remediation and monitoring of the shallow groundwater contamination which resulted from activities at the Site.

The Site is located at 1515 South Tenth Street in San Jose, California. The lead agency for the Site is the United States Environmental Protection Agency, Region IX ("EPA"). Support agencies include the Regional Water Quality Control Board, San Francisco Bay Region ("RWQCB") which is located in Oakland, California and the California Environmental Protection Agency, Department of Toxic Substances Control ("DTSC") which is located in Berkeley, California.

Preparation and public notice of this ESD is required pursuant to section 117{c} of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. section 9617(c). This ESD will become part of the administrative record (the "Administrative Record") for the Site. The Administrative Record is available for review in several repositories including the San Jose Main Library, Reference Desk, 180 West San Carlos Street, San Jose, California during normal library hours.

Currently, the groundwater is being extracted from a series of extraction wells located both on and off the Site. The extracted groundwater is pumped to an on-Site treatment facility. At the treatment facility the contaminated groundwater is first treated in an ultra violet/oxidation unit ("UV/Ox") . The UV/Ox unit subjects the groundwater to ultra violet light and oxidizing chemicals (ozone) which converts volatile organic compounds ("VOCs") in the contaminated groundwater into less toxic compounds. However, due to a lack of efficiency of the UV/Ox system in destroying several of the organic contaminants, the contaminated groundwater is then filtered through a series of granular activated carbon ("GAC") filters, and treated to levels below allowable discharge limits. The treated groundwater is then discharged to a local storm sewer.

Concentrations of organic contaminants at the Site have generally decreased since commencement of the groundwater treatment system in 1992. Based on the reductions in the concentrations of organic contaminants in the groundwater being extracted at the Site, and the inefficiency of the UV/Ox unit in its ability to reduce these organic contaminants to the discharge

limits, the potentially responsible parties ("PRPs") implementing the groundwater remediation program have requested that EPA approve a change to the current treatment system involving the removal of the UV/Ox treatment unit from the approved treatment program. The revised treatment system would consist of subjecting the contaminated groundwater to the GAC filters, exclusively.

II. Background

From 1947 to 1987, an operation existed at the Site wherein drums would be received on-site and rinsed and/or reconditioned. The drums often contained substances such as organic solvents, pesticides, acids, bases, oxidizers, and oils. Many of the substances were discharged to a drainage ditch and on-site sumps, eventually making their way to a nearby creek.

Site investigations indicated that on-site operations resulted in organic and inorganic contamination of the local shallow groundwater. These contaminants included trichloroethene (TCE), trichloroethane (TCA), tetrachloroethene (PCE), dichloroethene (DCE), dichloroethane (DCA), vinyl chloride, and others.

In September 1988, the OU-2 ROD was signed by EPA. Subsequently, in 1990, a group of PRPs for the Site agreed to implement the remedy selected in the OU-2 ROD. This agreement was memorialized in a Partial Consent Decree between the United States and the PRPs. The Partial Consent Decree was approved by the Northern District of California on July 6, 1990 (Civil No. C 90 0488 EFL). This ESD addresses differences to the remedy selected under the OU-2 ROD.

The OU-2 ROD addressed an Expedited Response Action (ERA)/Operable Unit for treatment of the contaminated shallow groundwater. The remedy selected in the OU-2 ROD addressed the principal near-term threats to groundwater in the Site vicinity. The threat of contamination of the deep drinking water aquifer and nearby surface water bodies was addressed by extracting the contaminated shallow groundwater and treating it to action levels prescribed by the Applicable or Relevant and Appropriate Requirements (ARARs).

The major components of the shallow groundwater remedy chosen in the OU-2 ROD included:

- construction and operation of a groundwater extraction system to intercept several shallow groundwater plumes;
- construction and operation of a groundwater treatment system; and
- disposal of treated groundwater to the storm sewer, which flows to Coyote Creek.

The selected groundwater treatment system included a commercially available packaged ultra violet light/ozone system to destroy VOCs. If necessary, an ion exchange column would be added to remove nickel. Treatability studies of the UV/Ox unit conducted at the Site in August 1988 determined that a GAC polishing unit was not necessary in order to meet the cleanup standards. However, startup operations of the UV/Ox unit following signing of the OU-2 ROD in September of 1988, indicated that the GAC polishing process was needed in order to meet the cleanup standards, and became part of the groundwater treatment system. The ion exchange column was found not to be necessary.

III. Basis for Differences

Since operation of the combined UV/Ox - GAC treatment system began in May 1992, the PRP's have reported that the UV/Ox unit has operated at a less than expected level of efficiency and higher than expected costs. According to the PRP's, the UV/Ox unit has operated at a destruction efficiency of less than 75%. The greatest effect on efficiency appears to be scaling of the reactor lamps due to carbonate in the water. High electrical costs for operating the unit ($26,000 per year), the need for storing and handling hazardous materials such as acids, bases, and peroxide, and the high maintenance requirements make operation of the unit a less desirable option than the operation of the GAC system alone.

Performance testing on the UV/Ox unit was conducted by the PRP's in July of 1997. The results were presented in a report dated July 25, 1997, titled "Performance Testing Report, Shallow Ground Water Treatment System, Lorentz Barrel and Drum Site" prepared by Harza Engineering Company. A copy of this report is available in the Administrative Record. The report indicated that no combination of pH adjustment, peroxide addition, lamp maintenance, or number of lamps used in the UV/Ox unit proved more cost effective or efficient than use of the GAC system alone.

With the operation of the UV/Ox unit at full lamp capacity, the electrical usage has been approximately 95,000 kilowatt hours per year and the number of GAC unit filter changes (changeouts) have been approximately four per year. By converting to the GAC system alone, none of the electrical usage for the UV/Ox system would be needed and approximately eight carbon changeouts would be needed for the GAC system per year. Annual operating costs are expected to decrease from approximately $48,500 to $18,500.

With the use of GAC filters alone, the cleanup levels for contaminants will remain the same. Furthermore, there are no contaminants destroyed by the UV/Ox unit that cannot be captured by the GAC filters as well. Use of the GAC filters alone was an alternative remedy discussed in the OU-2 ROD. However, use of the UV/Ox system was selected because the UV/Ox system was expected to operate at a higher level of efficiency and destroyed the organic compounds on-site rather than capturing the contaminants in the GAC filters for future off-site

destruction. In the OU-2 ROD, the GAC system was determined to achieve all objectives of the selected remedy in an identical manner to the UV/Ox system, including ARARs (discharge limits) and timing. Considerations such as storage and use of hazardous materials and high energy use of the UV/Ox unit was not considered significant in the OU-2 ROD evaluation of the remedies.

IV. Support Agency Comments

EPA contacted DTSC and RWQCB to discuss the proposed ESD prior to distribution of the draft. Neither agency expressed concern with the proposed change to the selected remedy as presented in the ESD. Both agencies were sent draft copies of the ESD for comment in February 1998 and concurred with the ESD as described above. This proposed ESD does not affect either the completion of the remedy or the protectiveness of the selected remedy for the site as discussed in the ROD.

V. Affirmation of the Statutory Determinations

It is the determination of EPA and the State of California that this modified remedy continues to satisfy the statutory requirements of cleanup under the Superfund process. Considering the information that has been developed during implementation of the remedy and the proposed changes to the selected remedy, EPA and the State of California believe that proposed change to the selected remedy will remain protective of human health and the environment, will comply with Federal and State requirements that are applicable or relevant and appropriate to this remedial action, and will be cost effective. In addition, the revised remedy will continue to utilize cleanup solutions for the Site to the maximum extent practicable and will utilize a technology that consumes significantly less energy.

VI. Availability of Administrative Record

The Administrative Record for this Site is available for review and comment by any member of the public at the location mentioned above. No public meetings are proposed for this ESD unless public interest indicates that one may be warranted.

DECLARATION

The selected remedy is protective of human health and the environment, attains Federal and State requirements that are applicable or relevant and appropriate to the remedial action, and is cost effective. This remedy satisfies the statuatory preference for remedies that reduce toxicity, mobility, and/or volume as a principal element. It also utilizes permanent solutions to the maximum extent practicable.

4/24/98
Date

for Keith Takata, Director
Superfund Division
U.S. EPA, Region 9

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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May 1, 1998

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Re: Lorentz Barrel and Drum Superfund Site

Dear Ms. Flanagan:

I wanted to make sure that you received this document relating to the Explanation for Significant Differences relating to the Operable Unit 2 at the Lorentz Site.

Very Truly Yours,

Vicky Lang
Assistant Regional Counsel

Encl.